CLAIMS

What is claimed is:

1. A method for managing a network, the network including a plurality of network elements that are configured to be interconnected to one another, the method comprising:

receiving information about a link state for each network element in the plurality of network elements ;

determining whether any of the plurality of network elements are unreachable, based on the link state information; and

configuring a management policy for at least one of the network elements, the management policy identifying if any of the plurality of network elements are determined as being unreachable.

2. The method of claim 1, wherein configuring a management policy includes communicating with one or more of the network elements to account for any of the plurality of network elements that were detected as being unreachable.

3. The method of claim 1, wherein configuring a management policy includes signaling to an operator interface an indication that one or more network elements are unreachable.

4. The method of claim 1, further comprising updating a data structure that includes the link state information for each network element in the plurality of network elements.

5. The method of claim 1, further comprising updating a data structure that includes the link state information for each network element in the plurality of network elements by receiving a broadcast from at least some of the plurality of network elements, the broadcast from each network element containing information about the link state for each network element in the plurality of network elements.

6. The method of claim 1, wherein configuring a management policy includes detecting that at least one of the plurality of network elements is unreachable, and then identifying which one of the network elements in the plurality of network elements are unreachable.

7. The method of claim 1, wherein configuring a management policy includes detecting that at least one of the plurality of network elements is unreachable, and then polling one or more selected network elements in the plurality of network elements to identify which one of the plurality of network elements are unreachable.

8. The method of claim 1, wherein configuring a management policy includes instructing a management device to configure the management policy for at least one of the plurality of network elements.

9. The method of claim 1, wherein the link state information for each network element describes a connection between that network element and at least one other network element designated to be connected to that network element.

10. A method for managing a network, the network including a plurality of network elements that are configured to be interconnected to one another, the network including a management device to manage at least one of the network elements using one or more policies, the plurality of network elements being in communication with a first router that maintains link state information about the interconnectivity of the plurality of network elements, the method comprising:

accessing the link state information from the first router, the link state information describing a connection between each network element in the plurality of network elements and at least one network element designated to be connected to that network element; and

detecting if any of the plurality of network elements are unreachable for communications with the management device using the link state information from the first router.

11. The method of claim 10, further comprising configuring a management policy for the plurality of network elements if one or more of the plurality of network elements are detected to be unreachable.

12. The method of claim 10, wherein in response to detecting one or more network elements are unreachable, the method comprises signaling an indication that one or more elements are unreachable to an operator interface.

13. The method of claim 10, wherein detecting if any of the plurality of network elements are unreachable for communications with the management device includes detecting at least one of the plurality of network elements having a failure using the link state information.

14. The method of claim 10, wherein accessing the link state information includes declaring one of the plurality of interconnected elements as a second router to the first router.

15. A method for managing a network, the network including a plurality of network elements that are configured to be interconnected to one another, the network including a management device to manage at least one of the network elements using one or more policies, the method comprising:

operating the plurality of network elements using a link state protocol that causes link state information to be generated; and

detecting if any of the network elements are unreachable using link state information provided by the network elements operating the link state protocol.

16. The method of claim 15, further comprising configuring a management policy for at least one of the network elements using the management device, the management policy identifying if any of the plurality of network elements are detected as being unreachable.

17. The method of claim 15, further comprising communicating with one or more of the network elements to implement a management policy that accounts for any of the plurality of network elements that were detected as being unreachable.

18. The method of claim 15, further comprising signaling an indication to an operator interface that one or more network elements are unreachable.

19. The method of claim 15, wherein detecting if any of the network elements are unreachable includes detecting a break in the plurality of network elements being interconnected to one another.

20. The method of claim 15, wherein detecting if any of the network elements are unreachable includes detecting a break in the plurality of network elements being interconnected to one another, and then communicating with each network element to identify which one or more of the network elements are unreachable.

21. A method for managing a network, the network including a plurality of network elements that are configured to be interconnected to one another, the method comprising:

receiving link state information automatically from the plurality of network elements operating a link state protocol, the link state information from each network element indicating a status of a connection with an adjacent network element in the plurality of network elements; and

configuring a management policy for the plurality of network elements by subsequently determining if one or more of the plurality of network elements are reachable using the link state information

22. The method of claim 21, wherein operating the plurality of network elements includes operating the plurality of network elements using an Open Shortest Path First (OSPF) protocol.

23. The method of claim 21, wherein operating the plurality of network elements includes operating the plurality of network elements using an Enhanced Internet Gateway Routing Protocol (EIGRP) protocol.

24. The method of claim 21, further comprising determining routes for communication packets to the plurality of network elements using the link state information.

25. A computer system for managing a network, the network including a plurality of network elements, the computer system comprising:

a processor;

a network interface to receive link state information for the plurality of network elements; and

a storage medium coupleable to the processor, the storage medium carrying instructions for:

determining whether any of the plurality of network elements are unreachable, based on the link state information, and

for configuring a management policy for at least one of the network elements, the management policy identifying if any of the plurality of network elements are determined as being unreachable.

26. The computer system of claim 25, wherein the instructions for configuring a management policy includes instructions for communicating with one or more of the network elements to account for any of the plurality of network elements that were detected as being unreachable.

27. The computer system of claim 25, wherein the instructions for configuring a management policy includes instructions for signaling to an operator interface an indication that one or more network elements are unreachable .

28. The computer system of claim 25, wherein the storage medium carries instructions for updating a data structure that includes link state information for each network element in the plurality of network elements.

29. A computer-readable medium for managing a network, the network including a plurality of network elements that are configured to be interconnected to one another, the computer-readable medium carrying instructions for performing:

receiving information about a link state for each network element in the plurality of network elements ;

determining whether any of the plurality of network elements are unreachable, based on the link state information; and

configuring a management policy for at least one of the network elements, the management policy identifying if any of the plurality of network elements are detected as being unreachable.

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30. The computer-readable medium of claim 29, wherein the computer-readable medium includes instructions for communicating with one or more of the network elements to account for any of the plurality of network elements that were detected as being unreachable.

31. The computer-readable medium of claim 29, wherein instructions for configuring a management policy include instructions for signaling to an operator interface an indication that one or more network elements are unreachable

32. The computer-readable medium of claim 29, wherein the computer-readable medium includes instructions for updating a data structure that includes the link state information for each network element in the plurality of network elements. .

33. The computer-readable medium of claim 29, wherein the computer-readable medium includes instructions for updating a data structure that includes the link state information for each network element in the plurality of network elements by receiving a broadcast from at least some of the plurality of network elements, the broadcast from each network element containing information about the link state for each network element in the plurality of network elements.

34. The computer-readable medium of claim 29, wherein instructions for configuring a management policy includes instructions for detecting that at least one of the plurality of network elements is unreachable, and then identifying which one of the network elements in the plurality of network elements are unreachable

35. The computer-readable medium of claim 29, wherein instructions for configuring a management policy include instructions detecting that at least one of the plurality of network elements is unreachable, and then polling one or more selected network elements in the plurality of network elements to identify which one of the plurality of network elements are unreachable

36. A computer system for managing a network, the network including a plurality of network elements that are configured to be interconnected to one another, the computer system comprising:

means for receiving information about a link state for each network element in the plurality of network elements;

determining whether any of the plurality of network elements are unreachable, based on the link state information; and

means for configuring a management policy for at least one of the network elements, the management policy identifying if any of the plurality of network elements are detected as being unreachable.